FIG. 1

FIG. 2

Env   Esv

MOTION
PICTURE ES
DISPLAY
FIELD

STILL
IMAGE ES
DISPLAY
FIELD

SCENE DISPLAY FIELD

Es1

FIG. 3

```
Group{                                      : GROUPING OF NODES THAT
                                              CONSTITUTE SCENE
  children[                                 : START OF DESCRIBING CHILD NODES
    Transform{                              : GROUPING OF NODES RELEVANT
                                              TO COORDINATE TRANSFORMATION
      translation -100                      : POSITION OF ORIGIN ON LOCAL
                                              COORDINATE PLANE  #500
      scale 431                             : SCALING OF LOCAL
                                              COORDINATE PLANE  #501
      children[
        Shape{                              : OBJECT TO BE DISPLAYED
          geometry Box{}                    : CUBE
          appearance Appearance{            : PROPERTIES OF SURFACE OF
                                              OBJECT
            texture MovieTexture{url 3}     : MOTION PICTURE PROVIDING
                                              TEXTURE
          }
        }
      ]
    }
    Transform{
      translation 4.520                     : POSITION OF ORIGIN ON
                                              LOCAL COORDINATE PLANE  #502
      scale 111                             : SCALING OF LOCAL
                                              COORDINATE PLANE  #503
      children[
        Shape{
          geometry Box{}
          appearance Appearance{
            texture MovieTexture{url 4}
          }
        }
      ]
    }
  ]
}
```
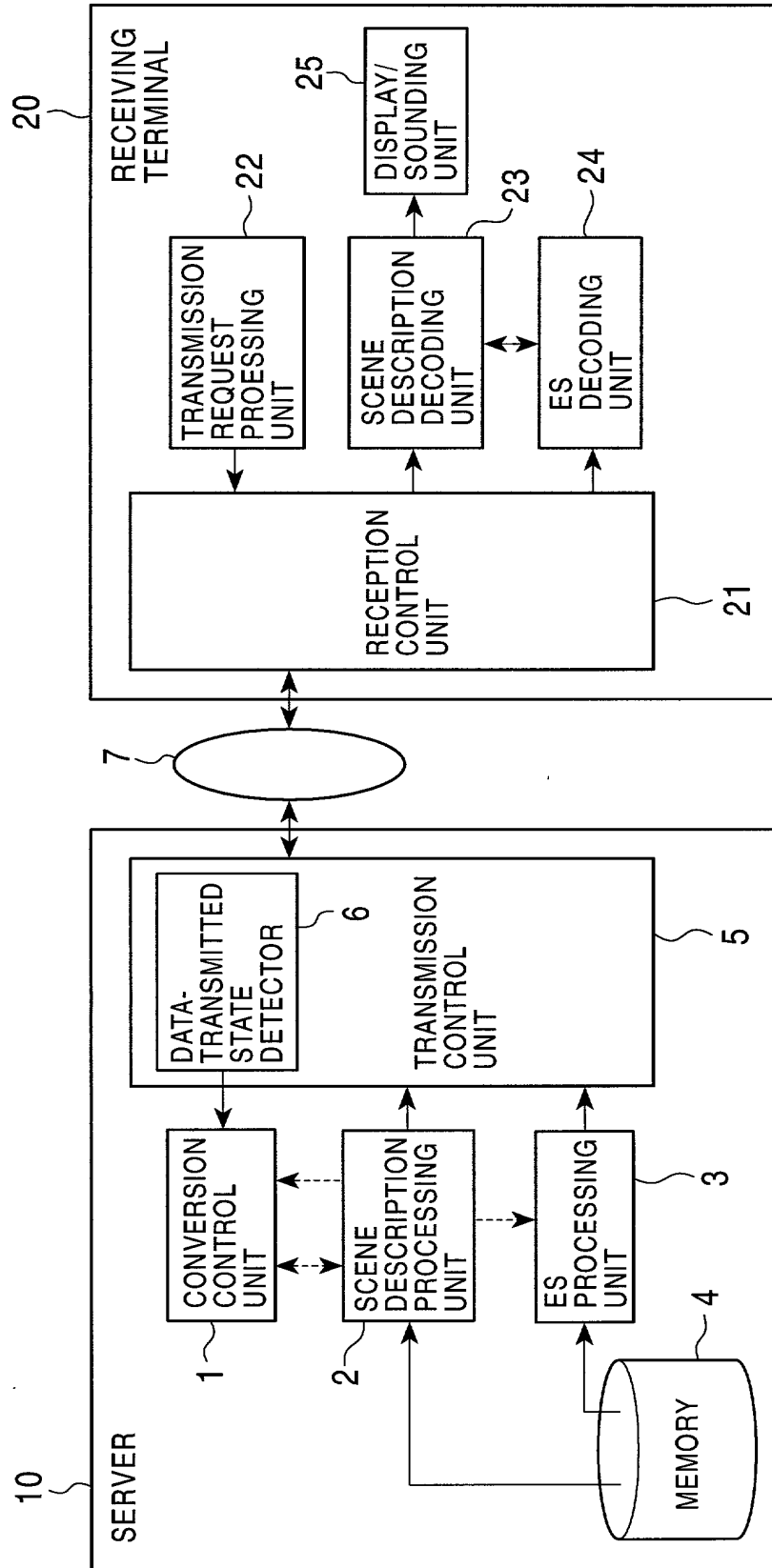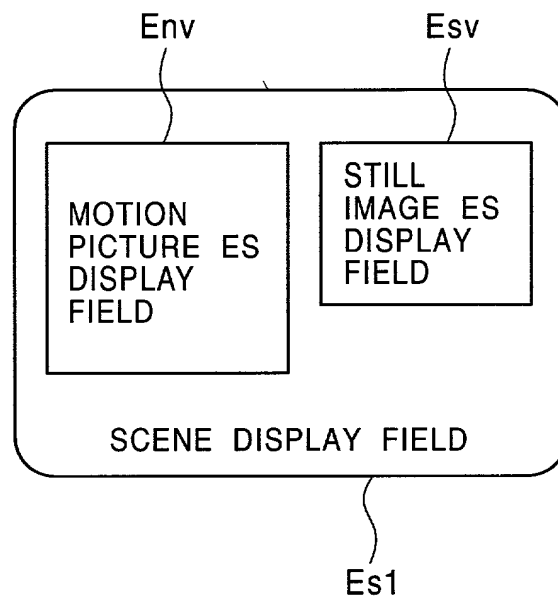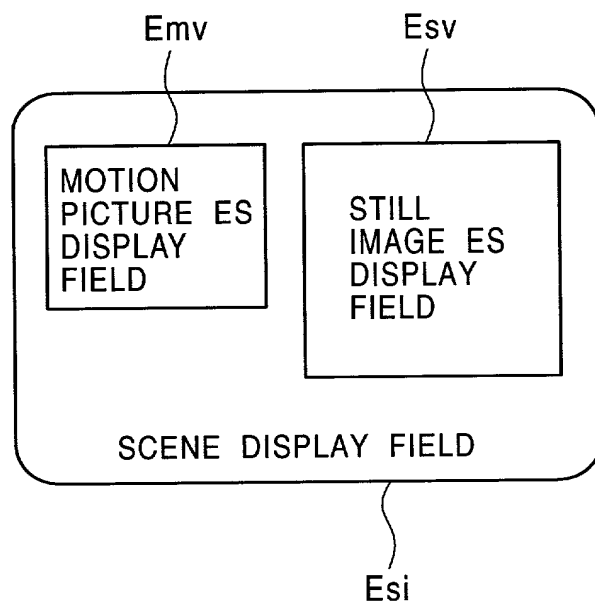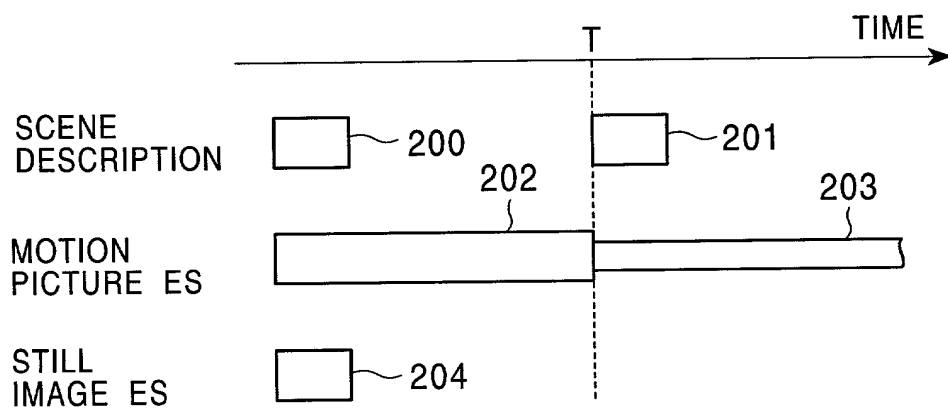
FIG. 4

Emv   Esv

| MOTION PICTURE ES DISPLAY FIELD | STILL IMAGE ES DISPLAY FIELD |

SCENE DISPLAY FIELD

Esi

FIG. 5

TIME

SCENE DESCRIPTION   200   202   201

MOTION PICTURE ES   203

STILL IMAGE ES   204

T

FIG. 6

```
Group{                                    : GROUPING OF NODES THAT
                                            CONSTITUTE SCENE
  children[                               : START OF DESCRIBING CHILD NODES
    Transform{                            : GROUPING OF NODES RELEVANT
                                            TO COORDINATE TRANSFORMATION
      translation -4.520                  : POSITION OF ORIGIN ON LOCAL
                                            COORDINATE PLANE  #600
      scale 10.751                        : SCALING OF LOCAL
                                            COORDINATE PLANE  #601
      children[
        Shape{                            : OBJECT TO BE DISPLAYED
          geometry Box{}                  : CUBE
          appearance Appearance{          : PROPERTIES OF SURFACE OF
                                            OBJECT
            texture MovieTexture{url 3}   : MOTION PICTURE PROVIDING
                                            TEXTURE
          }
        }
      ]
    }
    Transform{
      translation 100                     : POSITION OF ORIGIN ON LOCAL
                                            COORDINATE PLANE  #602
      scale 441                           : SCALING OF LOCAL
                                            COORDINATE PLANE  #603
      children[
        Shape{
          geometry Box{}
          appearance Appearance{
            texture MovieTexture{url 4}
          }
        }
      ]
    }
  ]
}
```

FIG. 7

```
ObjectDescriptor{                        : IDENTIFIER CORRESPONDING TO
  ODid=3                                   URL IN BIFS
  ES_Descriptor{                         : ES INFORMATION DESCRIPTOR
    ES_ID=10                             : ES NUMBER ID

    ...

    DecoderConfigDescriptor{             : ES DECODING INFORMATION
                                           DESCRIPTOR
      ...

      bufferSizeDB=4000                  : ES DECODING BUFFER SIZE [Byte]
      maxBitRate=1000000                 : MAXIMUM BIT RATE FOR ES [bps]
      avgBitRate=1000000                 : AVERAGE BIT RATE FOR ES [bps]

      ...

    }

    ...

  }
}
ObjectDescriptor{
  ODid=4
  ES_Descriptor{
    ES_ID=11

    ...

    DecoderConfigDescriptor{

      ...

      bufferSizeDB=1000
      maxBitRate=240000
      avgBitRate=240000

      ...

    }

    ...

  }
}
```

FIG. 8

```
ObjectDescriptor{
  ODid=3                        : IDENTIFIER CORRESPONDING TO
                                  URL IN BIFS
  ES_Descriptor{                : ES INFORMATION DESCRIPTOR
    ES_ID=10                    : ES NUMBER ID
    ...
    DecoderConfigDescriptor{    : ES DECODING INFORMATION
                                  DESCRIPTOR
      ...
      bufferSizeDB=2000         : ES DECODING BUFFER SIZE [Byte]
      maxBitRate=500000         : MAXIMUM BIT RATE FOR ES [bps]
      avgBitRate=500000         : AVERAGE BIT RATE FOR ES [bps]
      ...
    }
    ...
  }
}
ObjectDescriptor{
  ODid=4
  ES_Descriptor{
    ES_ID=11
    ...
    DecoderConfigDescriptor{
      ...
      bufferSizeDB=1000
      maxBitRate=240000
      avgBitRate=240000
      ...
    }
    ...
  }
}
```

FIG. 9

```
Group{
 children[
  Transform{
   translation 000              :POSITION OF ORIGIN ON LOCAL
                                 COORDINATE PLANE  #902
   scale 4.5 4.51               :SCALING OF LOCAL
                                 COORDINATE PLANE  #903
   children[
    Shape{
     geometry Box{}
     appearance Appearance{
      texture MovieTexture{url 4}
     }
    }
   ]
  }
 ]
}
```
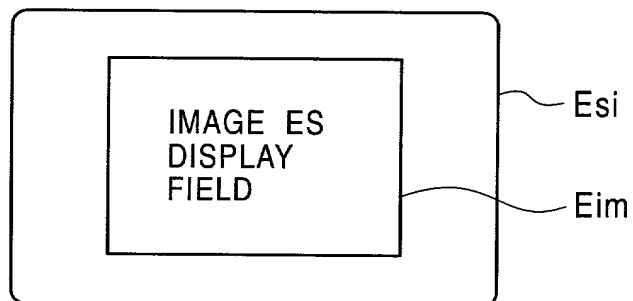
FIG. 10

IMAGE ES
DISPLAY
FIELD

Esi

Eim

FIG. 11

```
Group{
  children[
    Transform{
      children[
        Shape{                              : OBJECT TO BE DISPLAYED
          geometry IndexedFaceSet{          : POLYGON
            coord Coordinate{               : COORDINATES REPRESENTING
                                              APEX
              point[
                0.0, 0.0, 0.0,
                ...
                1.0, -1.0, 0.0]
            }
            coordIndex [                    : DESIGNATION OF COORDINATES
                                              REPRESENTING APEX
              0, 1, 3, -1,
              ...
              109, 110, 111, -1
            ]
          }
        }
      ]
    }
  ]
}
```
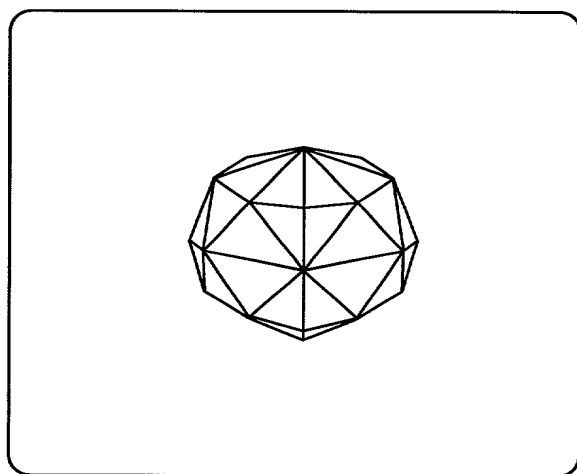
FIG. 12

FIG. 13

```
Group{
 children[
  Transform{
   children[
    Shape{                          : OBJECT TO BE DISPLAYED
      geometry Sphere{}             : SPHERE
     }
    ]
   }
  ]
 }
```

FIG. 14

FIG. 15
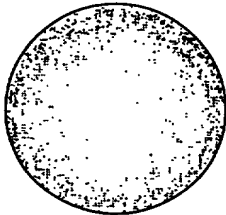
```
Group{ children[
    Transform{
     translation-300
     children[
       Shape{
         geometry Sphere{}          : SPHERE
       }
     ]
    }
    Transform{
     translation 0 0 0
     children[
       Shape{
         geometry Box{}             : CUBE
       }
     ]
    }
    Transform{
     translation 0 -3 0
     children[
       Shape{
         geometry Cone{}            : CONE
       }
     ]
    }
    Transform{
     translation 3 0 0
     children[
       Shape{
         geometry Cylinder{}        : CYLINDER
       }
     ]
    }
]}
```
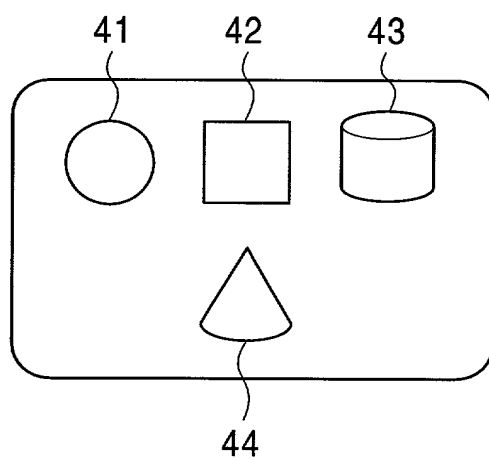
FIG. 16

41 42 43

44

FIG. 17

```
DEF 1 Group{ children[
    Transform{
     translation -300
     children[
      Shape{
         geometry Sphere{}      : SPHERE
       }
     ]
    }
]}
```
— AU1

```
NodeInsertion command to 1's children
Transform{
  children[
    Shape{
      geometry Box{}            : CUBE
    }
]}
```
— AU2

```
NodeInsertion command to 1's children
Transform{
   translation 0-30
   children[
     Shape{
       geometry Cone{}          : CONE
     }
]}
```
— AU3

```
NodeInsertion command to 1's children
Transform{
   translation 300
   children[
     Shape{
       geometry Cylinder{}      : CYLINDER
     }
]}
```
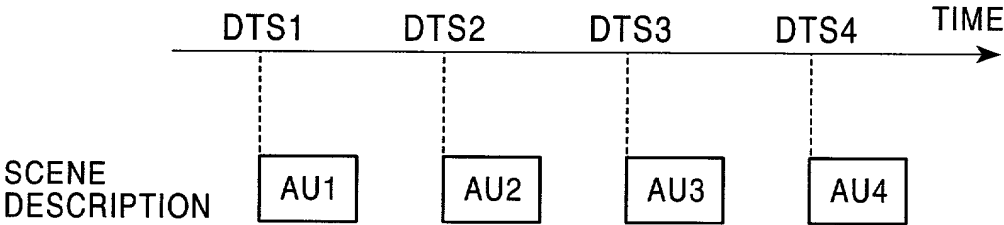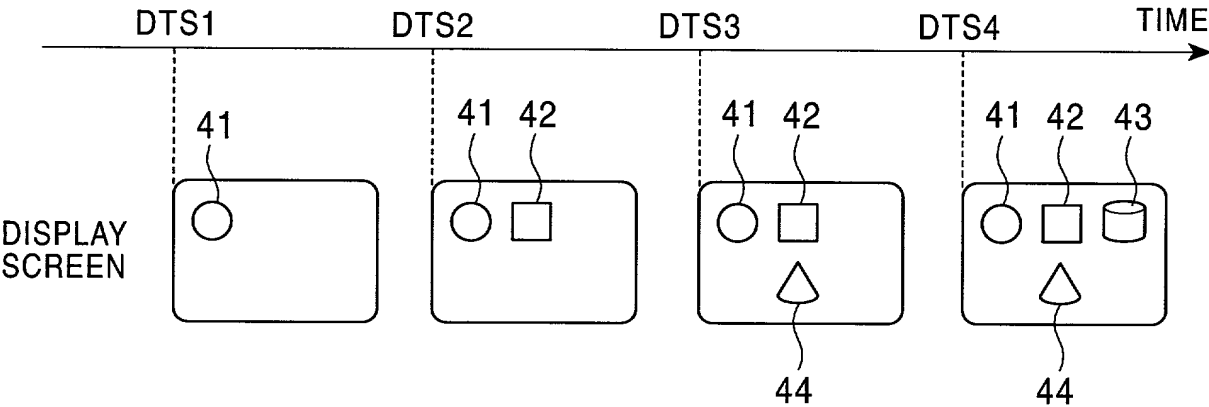— AU4

FIG. 18

DTS1 DTS2 DTS3 DTS4 TIME

SCENE
DESCRIPTION   AU1   AU2   AU3   AU4

FIG. 19

DTS1 DTS2 DTS3 DTS4 TIME

DISPLAY
SCREEN

41   41 42   41 42   41 42 43

44   44

FIG. 20